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SEARCH REQUEST FORM **Scientific and Technical Information Center - EIC2800**

Rev. 8/27/01 This is an experimental format -- Please give suggestions or comments to Jeff Harrison, CP4-9C18, 306-5429.

Date 8/20/02 Serial # 09/806,560 Priority Application Date 3/30/01

Your Name DACEI Doug Examiner # _____

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In what format would you like your results? Paper is the default. PAPER DISK EMAIL

If submitting more than one search, please prioritize in order of need.

The EIC searcher normally will contact you before beginning a prior art search. If you would like to sit with a searcher for an interactive search, please notify one of the searchers.

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08-20-02 P12:27 OUT

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What is the topic, such as the **novelty**, motivation, utility, or other specific facets defining the desired **focus** of this search? Please include the concepts, synonyms, keywords, acronyms, registry numbers, definitions, structures, strategies, and anything else that helps to describe the topic. Please attach a copy of the abstract and pertinent claims.

WHAT IS THE MOLECULAR SIZE OF THE FOLLOWING COMPOUND

MgF_2, MgO, SiO_2, Al_2O_3

(THE DIAMETER OF THE MOLECULES).

Staff Use Only
Searcher: HARRISON
Searcher Phone: 306-5429
Searcher Location: STIC-EIC2800, CP4-9C18
Date Searcher Picked Up: 8-21-02
Date Completed: 8-21-02
Searcher Prep/Rev Time: 25
Online Time: 10

Type of Search
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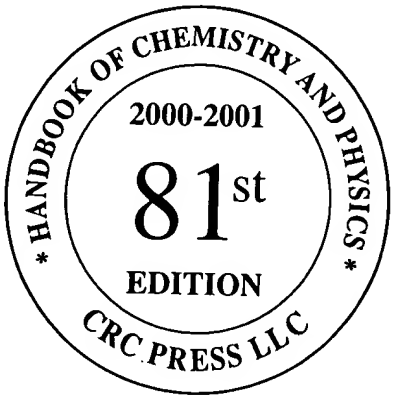
A Ready-Reference Book of Chemical and Physical Data



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Former Director, Standard Reference Data

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Boca Raton London New York Washington, D.C.

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This 3rd electronic edition follows the 81st edition of the print Handbook in terms of content. There are several expanded tables: Fundamental Physical Constants (the new set of CODATA recommended values, replacing the Elements (descriptive texts on the occurrence, properties, history, and uses of all the chemical elements); Disso Organic Acids and Bases (expanded by 50%); Dipole Moments (revised and expanded); Threshold Limits for Air (including the most recent recommendations).

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CRYSTALLOGRAPHIC DATA ON MINERALS

This table contains x-ray crystallographic data on about 400 common minerals, as well as selected crystalline elements. Entries are arranged alphabetically by mineral name. The columns are:

Name: Common name of the mineral.
Formula: Chemical formula for a typical sample of the mineral. Composition often varies considerably with the origin of the sample.
Crystal system: tricl = triclinic; monocl = monoclinic; orth = orthorhombic; tetr = tetragonal; hex = hexagonal; rhomb = rhombohedral; cubic = cubic.
Structure type: Prototype for the structural arrangement of the crystallographic cell.
Z: Number of formula units per the unit cell.
a, *b*, *c*: Lengths of the cell edges in Å (1Å = 10^{-8} cm).
α, β, γ : Angles between cell axes.

REFERENCES

1. Robie, R.A., Bethke, P.M., and Beardsley, K.M., *U. S. Geological Survey Bulletin 1248*, U. S. Government Printing Office, Washington, D.C.
2. Donnay, J.D.H., and Ondik, H.M., *Crystal Data Determinative Tables, Third Edition, Volume 2. Inorganic Compounds*, Joint Committee on Powder Diffraction Standards, Swarthmore, PA. 1973.
3. Deer, W.A., Howie, R.A., and Zussman, J., *An Introduction to the Rock-Forming Minerals, 2nd Edition*, Longman Scientific & Technical, Harlow, Essex, 1992.

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Crystallographic Data on Minerals

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Angstrom Angstrom^3

☑	no.	material or substance name	mol. formula	common formula	CAS Registry no.	crystal system	crystal str. type	formula units per unit cell	unit cell dimension a (Å)	unit cell dimension b (Å)	unit cell dimension c (Å)	unit cell angle alpha (°)	unit cell angle beta (°)	unit cell angle gamma (°)	unit cell volume (Å^3)
☑	83	Coesite	O_2Si	SiO_2	13778-38-6	monoclinic		16	7.152	12.379	7.152		120.00		548.37
☑	89	Corundum	Al_2O_3	Al_2O_3		rhombohedral	corundum	6	4.7591		12.9894				254.78
☑	92	Cristobalite (α)	O_2Si	SiO_2	19138-68-2 [1317-40-4]	tetragonal		4	4.971		6.918				170.95
☑	93	Cristobalite (β)	O_2Si	SiO_2		cubic		8	7.1382						363.72
☑	360	Stishovite	O_2Si	SiO_2	13778-37-5	tetragonal	rutile	2	4.1790		2.6649				40.540
☑	391	Tridymite	O_2Si	SiO_2	15468-32-3 [15468-32-3]	hexagonal		4	5.0463		8.2563				182.08

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☑	no.	material or substance name	mol. formula	common formula	CAS Registry no.	crystal system	crystal str. type	formula units per unit cell	unit cell dimension a (Å)	unit cell dimension b (Å)	unit cell dimension c (Å)	unit cell angle alpha (°)	unit cell angle beta (°)	unit cell angle gamma (°)	unit cell volume ($Å^3$)
☑	248	Melanophlogite	O_2Si	SiO_2	12035-58-4	cubic	clathrate type	46	13.402						2407.2

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☑	293	Periclase	MgO	MgO		cubic	rock salt	4	4.2117						74.709

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☑	no.	material or substance name	mol. formula	common formula	CAS Registry no.	crystal system	crystal str. type	formula units per unit cell	unit cell dimension a (Å)	unit cell dimension b (Å)	unit cell dimension c (Å)	unit cell angle alpha (°)	unit cell angle beta (°)	unit cell angle gamma (°)	unit cell volume ($Å^3$)
☑	316	Quartz (α)	O_2Si	SiO_2	12068-61-0	hexagonal		3	4.9136		5.4051				113.01
☑	317	Quartz (β)	O_2Si	SiO_2	12044-30-3	hexagonal		3	4.999		5.4592				118.15
☑	334	Sellaite	F_2Mg	MgF_2	12412-52-1 [1309-64-4]	tetragonal	rutile	2	4.621		3.050				65.13

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